

Partnership to Establish the Republic of Uzbekistan Special Center for Modeling and Simulation (SCMS) and National M&S Infrastructure

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BACKGROUND

The Republic of Uzbekistan has embarked upon a very comprehensive and challenging initiative to introduce modeling and simulation (M&S) into its Armed Forces. Minister of Defense of Uzbekistan, Dr. Kodir Gulamov, visited the United States in October 2000 as part of an official United States (US)-Uzbekistan (UZ) series of national discussions. During this visit Dr. Gulamov met with senior members of the US Office of Secretary of Defense (OSD) and shared his vision and desire to introduce M&S into the Uzbek Armed Forces. The lead OSD office for Uzbekistan, OSD International Security Policy (ISP)/Eurasia, contacted the Modeling and Simulation Information Analysis Center (MSIAC) and requested a visit and discussion on M&S and its value to Uzbekistan. Additionally, during the half-day visit, the need for increased M&S awareness and education and, specifically, the need for a national level M&S Master Plan to guide the Uzbek initiative were addressed. After his visit to the US, Minister Gulamov requested OSD assistance in initiating a program to accomplish these specific tasks in order to develop the foundation for the introduction of M&S into the Uzbek Armed Forces. OSD ISP/Eurasia requested that the MSIAC assist them in this effort and arranged for this effort to be initiated with a visit by OSD ISP/Eurasia and MSIAC personnel to the Uzbek Ministry of Defense (MOD) in May 2001.

In May 2001, the two representatives from the MSIAC along with a representative from its OSD sponsor, ISP/Eurasia, traveled to Tashkent, Uzbekistan for a 10-day visit and series of meetings. During this visit, several sessions of M&S education courses were conducted and as well as a weeklong series of meetings to discuss the needs, requirements and concept of this initiative. The Uzbek Armed Forces assembled a large group of people, involved in this initiative, to participate in the M&S education sessions so that all members would have a common understanding of M&S policy, technical and utilization concepts and terms. A senior level-working group was established with key Uzbek Armed Forces leaders and technical experts to work with the US members from the MSIAC. The formation of this working group was, and still is, one of the most critical elements in the success of this partnership project. Minister Gulamov met with the key members of the

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working group, the US Embassy representatives and his International staff and provided his vision and priorities for the introduction of M&S into the Armed Forces of Uzbekistan. He considered this M&S initiative as a key component of his efforts to transform the Uzbek Armed Forces. Minister Gulamov expressed the desire to improve his officers' leadership skills by using M&S in support of that goal. He provided a set of priorities for the introduction of M&S into the Uzbek Armed Forces; 1) M&S at the tactical level (at the Armed Forces Academy simulation center), 2) M&S in support of education and training at the military colleges and sergeants schools, and 3) at the operational level (at the Military Districts). He also stated that he would like to send officers to the US to receive advanced degrees in M&S. Minister Gulamov expressed his support and commitment for this initiative and asked the working group to develop the means to accomplish his vision. Additionally, discussions about the introduction of advanced distributed learning (ADL) were initiated by the Uzbek members of the working group and it was requested that this also be included in the planning effort. During the final working meeting, it was requested that the initial three-year planning effort be completed within a two-year timeframe and this request was approved by OSD. The working group also agreed on a process for development of the required planning documents and the basis for a Terms of Reference (TOR) to guide this effort.

The MSIAC developed the draft of the TOR along with a proposed timeline for the project. This draft was sent to the Uzbek working group for comment and proposed changes. The MSIAC completed the TOR with the Uzbek changes and provided the proposed TOR to OSD ISP/Eurasia for official coordination with the US Embassy in Tashkent, Uzbekistan and the Uzbek MOD. The TOR was signed by all parties and has provided the method and responsibilities for the conduct of the 2-year planning and education project.

MSIAC

The Modeling and Simulation Information Analysis Center (MSIAC) is one of 13 government-owned, contractor-operated information analysis centers under the guidance of the Defense Technical Information Center and sponsored by the Defense Modeling and Simulation office (DMSO). IIT Research Institute (IITRI) operates the MSIAC. The mission of the MSIAC is to be the center for excellence for M&S knowledge and operational support and to provide M&S solutions and services to defense organizations and industry. The members of the MSIAC staff are experienced defense and M&S professionals who understand operational problems, training, education and resources.

The MSIAC was designed to be the single integrated support activity for the use, employment and sustainment of modeling and simulation. It is an independent unbiased organization that can leverage the US defense community's M&S capability to find the most cost-effective solutions. The MSIAC is the focal point for M&S solutions with particular emphasis internationally in the following areas:

- Facilitates the development of integrated, state-of-the-art M&S capability for the Defense Forces; From concept to final product
- Requirements analysis
- Strategic planning and implementation
- Conducts M&S education and training
- Provides access M&S information and assistance

The MSIAC is currently conducting similar strategic planning and implementation assistance efforts in several countries. The MSIAC is a member of the US Enterprise team (ET).

ENTERPRISE TEAM

The US Enterprise team (ET) is a group of US organizations that are working in the international community and have formed a working group to coordinate, share information and assist each other in international activities. This coordination and assistance directly benefits the country in which they are working through the planning and synchronization of all the ongoing US M&S efforts and the implementation of a common approach, structure and hardware that can have multiple uses for the supported country. The current members of the ET and their roles within the ET are as follows:

- **Modeling and Simulation Information Analysis Center (MSIAC)** – Modeling and simulation requirement determination, strategic planning and education
- **Joint Forces Command (JFCOM)** – Global lead for Regional Security Cooperation Network and Joint M&S
- **NAVAIR Training Systems Division (NAVAIR TSD)** – Enhanced International Peacekeeping Capabilities (EIPC) program and Naval M&S
- **Simulation, Training and Instrumentation Command (STRICOM)** – Simulation Center establishment and Army M&S
- **Electronic Systems Center (ESC)** – National Military Command Center (NMCC) and Air Force M&S

MISSION

The mission of the Uzbek Modelling and Simulation Working Group (MSWG) and this initiative is to develop a comprehensive, integrated, state-of-the-art M&S and Advanced Distributed Learning capability for the Uzbek Armed Forces that will significantly improve operational readiness and technical capabilities. The MSWG is lead by the Ministry of Defense (MOD) with representative from the MOD, Military Academy and other parts of the Armed Forces, U.S. Office of the Assistant Secretary of Defense (International Security Policy) (OASD (ISP)) Eurasia, the U.S. Defense Attaché Office (USDAO) in Tashkent, and the U.S. Modeling and Simulation Information and Analysis Center (MSIAC). The MSIAC has brought the power and capabilities of the US ET to assist with this effort in Uzbekistan.

The specific characteristics of this initiative are shown below:

- Eight-year (plus) multi-phased program
- National M&S Center and 18 interconnected distributed facilities
 - Military Colleges, Sergeants Schools, Operational Commands and other Ministries involved with Civil Emergencies
- Integrated Advanced Distributed Learning capability
- NATO/PFP Interoperable
- Detailed coordinated planning and execution
 - Requirements Analysis through M&S Master Plan
- National ability to independently sustain and maintain the M&S system

SCOPE AND VISION OF M&S INITIATIVE

Scope

The scope of this plan covers current, developmental and future M&S and ADL systems. It addresses Uzbek Armed Forces needs in the principal application areas of training and exercises, defense planning and analysis, combat and security operations, military support for civil emergencies, research, technology development, and military equipment acquisition.

Vision

This plan establishes a methodology for the development of simulations in order to foster their interoperability and reuse, lays out a high-level roadmap for acquiring and developing a set of simulations and lays out other actions necessary to ensure the cost-effective development and employment of advanced M&S and ADL technology. It is a living document that will be revised as necessary to accommodate changes in requirements, technology, development strategies, employment concepts, opportunities, etc.

The Armed Forces of the Republic of Uzbekistan will use modelling and simulation, advanced distributed learning and related information technology to improve dramatically the combat readiness and technological capabilities of military personnel. Modeling and simulation and information technology will be integrated into a more robust technological infrastructure that will support military organizations at the tactical, operational, and strategic levels. This infrastructure will provide enhanced capabilities to conduct training and exercises, defense planning and analysis, combat and security operations, military support for civil emergencies, research, technology development, and military equipment acquisition.

Key Goals

The Minister of Defense intends to create an M&S and ADL capability within the Armed Forces and has stated specific goals for introduction of this capability. The Armed Forces plan to accomplish three specific goals through the use of M&S and ADL:

- 1) Improve efficiency in training military personnel,
- 2) Improve the professional skills and information-analytical capabilities of commanders and staff at different levels, including the development of threat scenarios,
- 3) Develop M&S capabilities as part of transformation of the Armed Forces.

Priorities

The Minister of Defense identified four major priorities for introducing M&S and ADL into the Armed Forces:

- 1) Develop M&S and ADL capabilities in new simulation center at the Academy of the Armed Forces to train personnel attending the Academy,
- 2) Develop M&S and ADL capabilities at the military colleges where initial-entry officers are trained,
- 3) Develop M&S and ADL capabilities at the Sergeants Schools,
- 4) Develop M&S and ADL capabilities at the Military Districts where the operational forces have their major headquarters.

Note: The capabilities outlined above will be added in a phased approach as experience is gained and as resources are made available.

STRATEGIC PLANNING AND IMPLEMENTATION ASSISTANCE

Key to the entire initiative with Uzbekistan has been the partnership between the US and Uzbekistan is developing the documents listed below. The documents and the educational and developmental process conducted to produce these fundamental guiding documents form the basis for the successful implementation of a comprehensive M&S capability within the Republic of Uzbekistan. These documents are:

- Requirements Analysis – Identifies requirements, resources available and existing M&S capability
- Concept Overview – Outlines the proposed M&S Strategy and provides an agreed document on which to base future planning
- Strategic Plan – Provides sufficient detail to support national programming and budgeting decisions
- M&S Master Plan – Foundation of the planning & implementation process – Contains as required:
 - Implementation Strategy
 - Integration Strategy
 - Acquisition Strategy
 - Education Strategy
 - Long-term Strategy

The Master Plan is the foundation of a comprehensive M&S capability. The M&S Master Plan approach has several specific characteristics:

- Tailored to the needs of the Armed Forces
- Action plan, not a study
- Vision, requirements, objectives and time-phased actions
- Detailed implementation, integration, acquisition, education and long-term strategy annexes
- Development process is an iterative and interactive educational process
- Living document – periodically revised to match evolving requirements and changing resources

These M&S capabilities can be acquired and implemented early in the planning process.

REPUBLIC OF UZBEKISTAN MODELING AND SIMULATION (M&S)/ADVANCED DISTRIBUTED LEARNING (ADL) MASTER PLAN

This document outlines a plan for the development of comprehensive modeling and simulation (M&S) and advanced distributed learning (ADL) capabilities for the Armed Forces of the Republic of Uzbekistan. The Ministry of Defense (MOD) initiated this program to facilitate education and training of Armed Forces personnel and to support military operations. This plan outlines the vision, requirements, and objectives. It also provides a time-phased approach for implementing these objectives and identifies the resources required to implement this program successfully.

This M&S/ADL Master Plan (MS/ADL MP) serves as an implementation guide for the Uzbek Armed Forces in the critical areas of modelling and simulation and advanced distributed learning. Subsequent editions of the plan are expected to define further the actions required to enhance M&S and ADL support to Armed Forces operations. In addition, the plan is expected to evolve as the Uzbek Armed Forces proceed with implementation, gain experience and develop additional insights.

The MS/ADL MP:

- Articulates a vision regarding the use of M&S and ADL in furtherance of the mission of the Uzbek Armed Forces;
- Outlines the impact that achieving this vision will have on various aspects of Armed Forces operations;
- Identifies the Armed Forces' M&S and ADL requirements;
- Establishes a strategy and a set of key objectives that the Armed Forces must accomplish to realize its vision and satisfy its M&S and ADL requirements;
- Identifies the actions required to achieve these objectives in a timely and a cost-effective manner; and
- Assigns responsibilities for accomplishment of the plan.

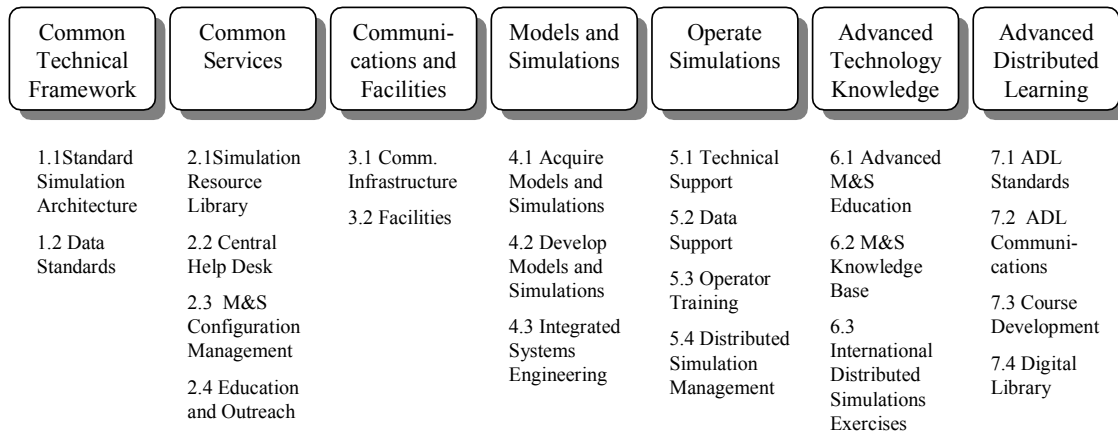
The following are important, but less immediate requirements for M&S and ADL capabilities. These capabilities will be added as expertise is developed and resources are made available.

- 1) Force Structure Analysis – Force structure analysis is the process of assessing and deciding on the right mix of personnel, material, weapon systems and training to optimise military capabilities. M&S can be useful tools in these assessments, allowing the MOD staff to analyse alternatives while considering various scenarios and force mixes.
- 2) Military Support For Civil Emergencies – The Armed Forces may provide needed assistance to civil authorities during man-made and natural disasters. M&S and related capabilities can be used to provide situational awareness and develop a coordinated response to such emergencies. For example, M&S applications can be used to analyse the aerial dispersal of contaminants, to predict casualties and allow for prompt evacuation of personnel. ADL capabilities can be used to train personnel in proper response techniques.
- 3) Research, Technology Development, and Military Equipment Acquisition – The cost effective and efficient development of armaments can be greatly enhanced with the use of M&S. A wide range of M&S applications are available to support concept development, engineering design, system integration, production, logistics and testing of advanced weapon systems.
- 4) National M&S and ADL Center(s) – The capabilities developed by the Armed Forces may have broader applicability to other government ministries and educational institutions.

M&S/ADL MASTER PLAN OBJECTIVES

The MSWG has developed a set of objectives that must be achieved to establish the M&S, ADL and related information technology capabilities required for this program. These objectives relate to standards, services, communications, facilities, hardware, software, and technological capabilities necessary for successful development and support of comprehensive M&S and ADL capabilities. These capabilities are categorized in the seven objective areas listed below:

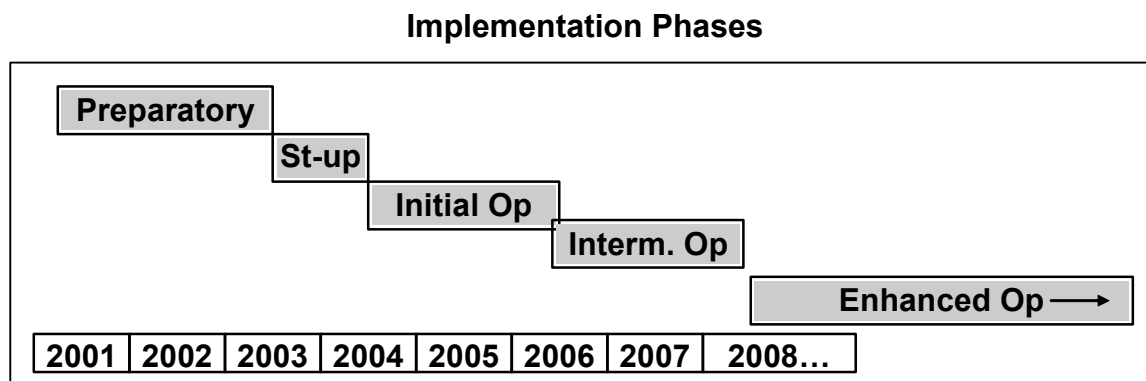
Objectives



PHASED DEVELOPMENT AND IMPLEMENTATION WITHIN THE UZBEK INITIATIVE

Developing and implementing a comprehensive M&S and ADL program that supports a wide-range of needs will be achieved by the phased development of capabilities. This approach allows the Armed Forces to plan, initiate, and incrementally develop adequate infrastructure in step with prioritized needs. It expands capabilities as personnel gain experience and as resources become available. This section outlines a five-phase implementation strategy that incrementally develops capabilities.

The five phases are shown in the chart below with specific discussion on each phase following:



Preparatory

The Preparatory Phase is a two-year planning and organizing time period. During this timeframe, the working group collaboratively develops a Terms of Reference (TOR), conducts a needs analysis, determines requirements and drafts the Concept Overview. Building on the needs analysis, requirements determination

and Concept Overview, the M&S and ADL Master Plan, Implementation Plan, Acquisition Strategy, and Future Plan are developed. The Special Center for Modeling and Simulations (SCMS) building modifications are completed and computer equipment is procured. Armed Forces personnel start advanced education programs and attend information exchange programs. This phase started in May 2001 with the first MSWG planning meeting and ends in April 2003 with the completion of planning and preparatory activities.

Start-Up

The Start-up Phase is a one-year period during which the Implementation Plan and Acquisition Strategy are first executed. The SCMS is equipped, systems prepared for use and procedures are refined. The use of simulation in academic instruction at the Academy will be demonstrated in October 2003. In December 2003, the SCMS will be used to allow the Armed Forces of the Republic of Uzbekistan to participate in Viking 03, a Partnership for Peace multinational staff training exercise. This phase begins in May 2003 and ends in April 2004.

Initial Operational

During the Initial Operational Phase the Simulation Center becomes operational and is used for training officers attending the Academy. Participation in joint computer-assisted exercises and similar M&S activities with other nations can be continued in this phase. Planning and coordination development of capabilities at the Military Colleges and Sergeants Schools is completed. This phase begins in May 2004 (or earlier, if start-up activities are completed) and continues through April 2006.

Intermediate Operational

During the Intermediate Phase M&S supported training is expanded to the Military Colleges and Sergeants Schools. During this phase, M&S will be used for training in tactical operations. Commanders and staffs will also be provided with M&S capabilities that support operational course of action analysis. Planning and coordination development of capabilities for the next phase is completed. This phase begins in May 2006 and continues through April 2008.

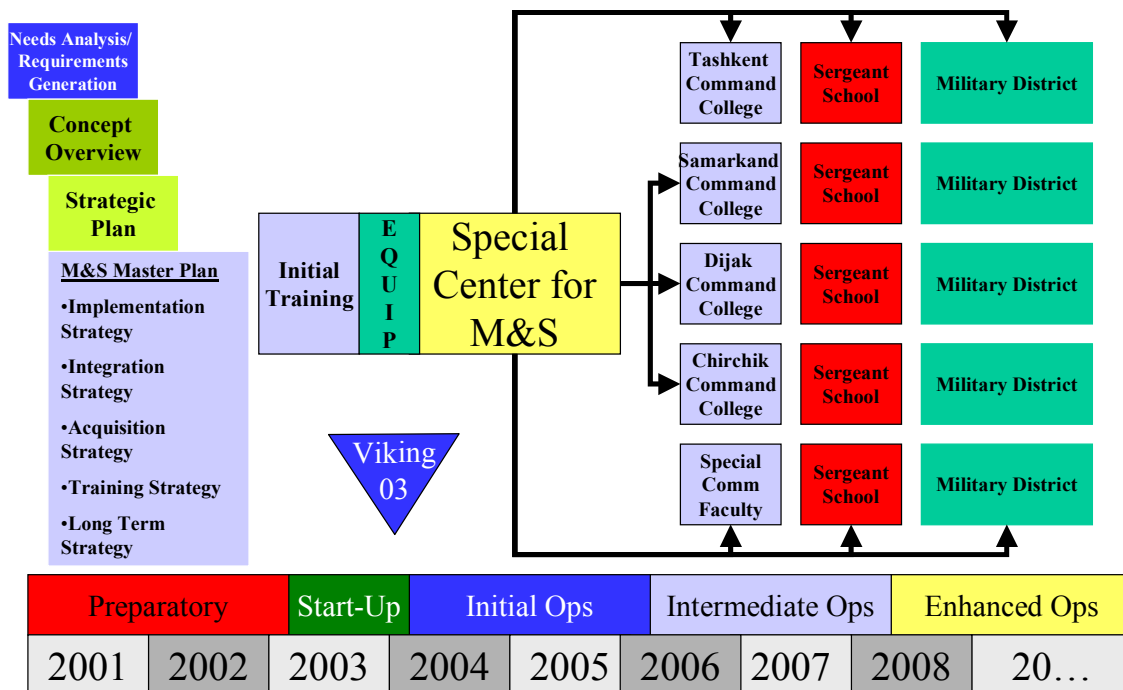
Enhanced Operational

Early in this phase M&S-supported training is expanded in the military districts to support individual soldier training. Additional M&S-based analytical capabilities are provided to further enhance defense planning and analysis, combat and security operations, and military support for civil emergencies. Simulation based acquisition capabilities are provided to support research, technology development, and military equipment and weapon systems acquisition. The enhanced operational phase is an open-ended phase, starting in May 2008.

The diagram below shows the comprehensive M&S/ADL program envisioned to be developed through the partnership between Uzbekistan and the US.



Uzbek Capabilities Timeline



CURRENT STATUS OF UZBEKISTAN M&S/ADL PARTNERSHIP EFFORT

The Uzbek MSWG has had four (4) major meetings each lasting for a week or more. In the time between the meetings, the majority of the work is accomplished. The MSIAC support team in conjunction with the Uzbek members of the MSWG and US Embassy personnel, research, coordinate, develop and prepare draft documents, briefings, plans and projects for the MSWG to discuss and approve during the working group meeting sessions.

The MSWG has developed and approved a Concept Overview document for the project, which describes the current assessment of M&S and ADL capabilities, needs and requirements, and the concept of how to address those identified needs and requirements. This document formed the basis for the discussions during the working group meetings on about how best to focus the efforts of the M&S and ADL initiative. The result of these discussions based on the Concept Overview resulted in another document called the Strategic Plan.

The “Strategic Plan for the Establishment of Modeling and Simulation and Advanced Distributed Learning Capabilities for the Armed Forces of Uzbekistan” or the Uzbek M&S/ADL Strategic Plan was developed to provide the strategic direction or guidance for the initiative. The strategic guidance was merged with resourcing requirements to provide a document that provided sufficient detail to support national programming and budgeting decisions. Specifically, the Uzbek M&S/ADL Strategic Plan was used as the cornerstone document in the development on a National Resolution on the establishment of a Special Center

for Modeling and Simulation (SCMS) and a national infrastructure upgrade to support its operations. This document signed by the President of Uzbekistan on July 9, 2002 provided top-level guidance to all Ministries within the Uzbek government on the establishment and support of the new SCMS. Based on this national resolution, the M&S/ADL initiative now has Presidential support and visibility. The rebuilding and upgrade of the building to house the new SCMS is designated to be completed on March 21, 2003 as a result of this national resolution. Additionally, the requested staffing to support the operation of the SCMS was approved in the national resolution.

The centerpiece of the M&S/ADL initiative is the establishment of the SCMS. The facility will be a true national simulation center and will be under the direction and guidance of the Minister of Defense as an operating office under the MOD structure. The simulation center will provide support to the Uzbek Armed Forces and other Ministries involved with Civil Emergency operations. In time, this simulation center will be the central hub in a series of distributed simulation centers across the key organizations of the Uzbek Armed Forces and other Ministries involved with Civil Emergency operations. Currently, eighteen (18) subordinate simulation centers are planned.

The initial training for the operation of the SCMS simulation center will include an initiative in partnership with the US where Uzbek officers travel to the US and work in an US simulation center. The objective of this program, called the Simulation Center Information Exchange Program (SCIEP) is to facilitate the “on-the-job-information transfer” in an actual simulation center environment. Two mid-grade Uzbek officers in key operational positions within the simulation center, with English language capability, will spend six-to-eight weeks in the US participating in the development, conduct and operation of simulation exercises. This program is currently planned for the March-April 2003 timeframe. It will include a mentorship program by the MSIAC focused on the operation of a simulation center and other aspect of the M&S community. Also included in this program are visits to key organizations involved in M&S and ADL activities.

The Uzbek M&S and ADL Master Plan has been completed and the final draft has been rewritten and is in the process of staffing for official approval. The draft Implementation Plan has been written and the draft will be reviewed by the MSWG in November. This Implementation Plan will provide guidance for all of the tasks and actions that will have to be accomplished to establish the SCMS and implement the objectives of the M&S and ADL Master Plan. The Acquisition Strategy is also in draft form and will be reviewed in November by the MSWG; however, a large majority of the near-term decisions contained in the Acquisition Strategy have already been made. The MSWG, based on the earlier identified needs and requirements, began working the Foreign Military Funding (FMF) process. A Letter of Request (LOR) for the initial hardware, software and training to equip the SCMS has been submitted through STRICOM, who has been working as a member of the MSWG. A Letter of Offer and Acceptance (LOA) has been submitted back to Uzbekistan by STRICOM and is in the process of being signed by the Uzbek Minister of Defense. This will start the procurement of the equipment and software for the installation that is scheduled to begin on May 4, 2003. Once the installation is complete, a train-up period of about three weeks will be conducted to train the Uzbek operators in the SCMS on how to operate the simulation Janus. Janus was chosen as the simulation to use to begin operations in the SCMS, based on Uzbek operational and training requirements and an assessment of current capabilities. Two more critical components of the SCMS are the Simulation Resource Library (SRL) and ADL Digital Library (DL). These libraries will enable the SCMS to function as the central M&S and ADL repository for information and data for the Uzbek Armed Forces. The development effort for these libraries is ongoing and will provide a capability that is compatible with NATO/PfP efforts.

Key future events for the SCMS include a visit by the President of Uzbekistan possibly in the September 2003 timeframe. This visit will include the official dedication of the SCMS and observing a actual simulation

exercise. In December 2003, the SCMS will participate in the PfP exercise, Viking 03. Viking 03 exercise will be hosted by Sweden with potentially 27 countries participating in that exercise. Uzbekistan will participate as a remote site with the SCMS operating as a battalion level response cell and will be equipped to be self-sufficient due to the fielding of SCMS and the coordination efforts of the US Enterprise Team. In addition to these events, the SCMS has the mission to support Uzbek Military Academy training and educational requirements with the use of M&S and ADL. Efforts to integrate M&S and ADL into the curriculum of the Academy will be ongoing and the development of unique courses and scenarios for the Uzbek Armed Forces will be accomplished as well.

SUMMARY

The goal and approach undertaken by the MSIAC in support of the MSWG is to train and educate the Uzbek Armed Forces to be able to conduct M&S and ADL activities using their own equipment and people. The successful establishment of the SCMS will be critical to the future success of the long-term program. The National Resolution signed by the President of Uzbekistan has been a major step toward that success.

In addition to the signing of the National Resolution, several important trends have been identified that have truly made this initiative successful. The first is the solid and unwavering support of this initiative from the Uzbekistan MOD and US OSD (ISP) leadership. This solid partnership has enabled the MSWG to produce results quickly. The continuity of Uzbek and US members in the MSWG has assisted in the development of a solid and confident partnership that is working toward a common goal. The use of the strategic planning efforts part of the educational process has also contributed to the near and long term success of this initiative by enabling all members of the MSWG to develop an understanding of all parts of the Master Plan. The assignment by the Uzbek Minister of Defense of outstanding and capable officers to be members of the MSWG and his leadership in this effort has proven to be a major part of its success. And finally, the involvement of the MSIAC as the central coordinator of this initiative along with its partnership with the US Enterprise Team has allowed this initiative to move forward in a coordinated and highly efficient manner. All these factors have already contributed to the perception that this is a highly successful effort. It is through this partnership that the Uzbek MOD will be able to establish the Special Center for Modeling and Simulation (SCMS) as the centerpiece of a national M&S infrastructure and achieve a coordinated and integrated M&S infrastructure that will fundamentally improve the future capability of the Uzbek Armed Forces.

ABOUT THE AUTHORS

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Col Rakhmatullaev is the Chief of the Special Center for Modeling and Simulation of the Armed Forces of Uzbekistan. He is also the lead for the Uzbekistan Modeling and Simulation Working Group and has the overall lead for the development of the M&S and ADL capability within the Uzbek Armed Forces. Col Rakhmatullaev holds a PhD. in Information Technology. He also is the Uzbek representative to numerous NATO working groups. He has also previously authored papers on the subject of M&S in Uzbekistan.

Capt Bobojohn Tursunov

Capt Tursunov is the Chief of Modelling and Simulation of the Special Center for Modeling and Simulation of the Armed Forces of Uzbekistan. He is also a key member of the Uzbekistan Modeling and Simulation Working Group and has a critical role for the development of the M&S and ADL capability within the Uzbek

Armed Forces. Capt Tursunov holds PhD's in Physics & Mathematics. He is the key Uzbek representative to the Viking 03 exercise planning group. He has also previously authored papers on the subject of M&S in Uzbekistan and presented presentations on the subject at other conferences as well.

Mr. Harry Thompson, U.S. Modeling and Simulation Information Analysis Center

Mr. Thompson is a Modeling and Simulation Information Analysis Center (MSIAC) project manager for international M&S support. The MSIAC is managed for DoD by IIT Research Institute – he joined the IIT Research Institute, AB Tech Group in 1999 and has supported numerous projects aimed at enhancing the use of M&S in defense organizations. These projects included authoring a DoD M&S Handbook, teaching M&S courses, developing several M&S education lessons and workshops, and assisting with the development of the PfP Simulation network plan. As a U.S Army officer assigned to the Defense Modeling and Simulation Office (DMSO), he led the project to draft the first NATO M&S Master Plan. He holds a Modeling and Simulation Professional Certification.

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Mr. Wrigley is a Modeling and Simulation Information Analysis Center (MSIAC) project manager for international M&S support. The MSIAC is managed for DoD by IIT Research Institute – he joined the IIT Research Institute, AB Tech Group in 1996 and has supported numerous projects aimed at enhancing the use of M&S in defense organizations. These projects included leading a Weapons of Mass Destruction (WMD) Civil Support Information System (CSIS) requirements analysis, conducting a DoD-wide War fighter M&S Needs Assessment, coordinating simulation support for a DOT&E-sponsored Interoperability Test Bed initiative, revising the DoD M&S Master Plan, drafting NATO's first M&S Master Plan, and writing the JSIMS Functional Requirements Document. He holds a Modeling and Simulation Professional Certification.

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*NATO M&S Conference
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Presented by:

Harry H. Thompson, III

Modeling and Simulation Information Analysis Center (MSIAC)



Agenda

- Background
- MSIAC/Enterprise Team
- Scope/Vision
- M&S working group (MSWG)
- Strategic planning and implementation assistance efforts
- M&S/ADL Master Plan
 - Objectives, phases and timeline
- Current status
- Summary

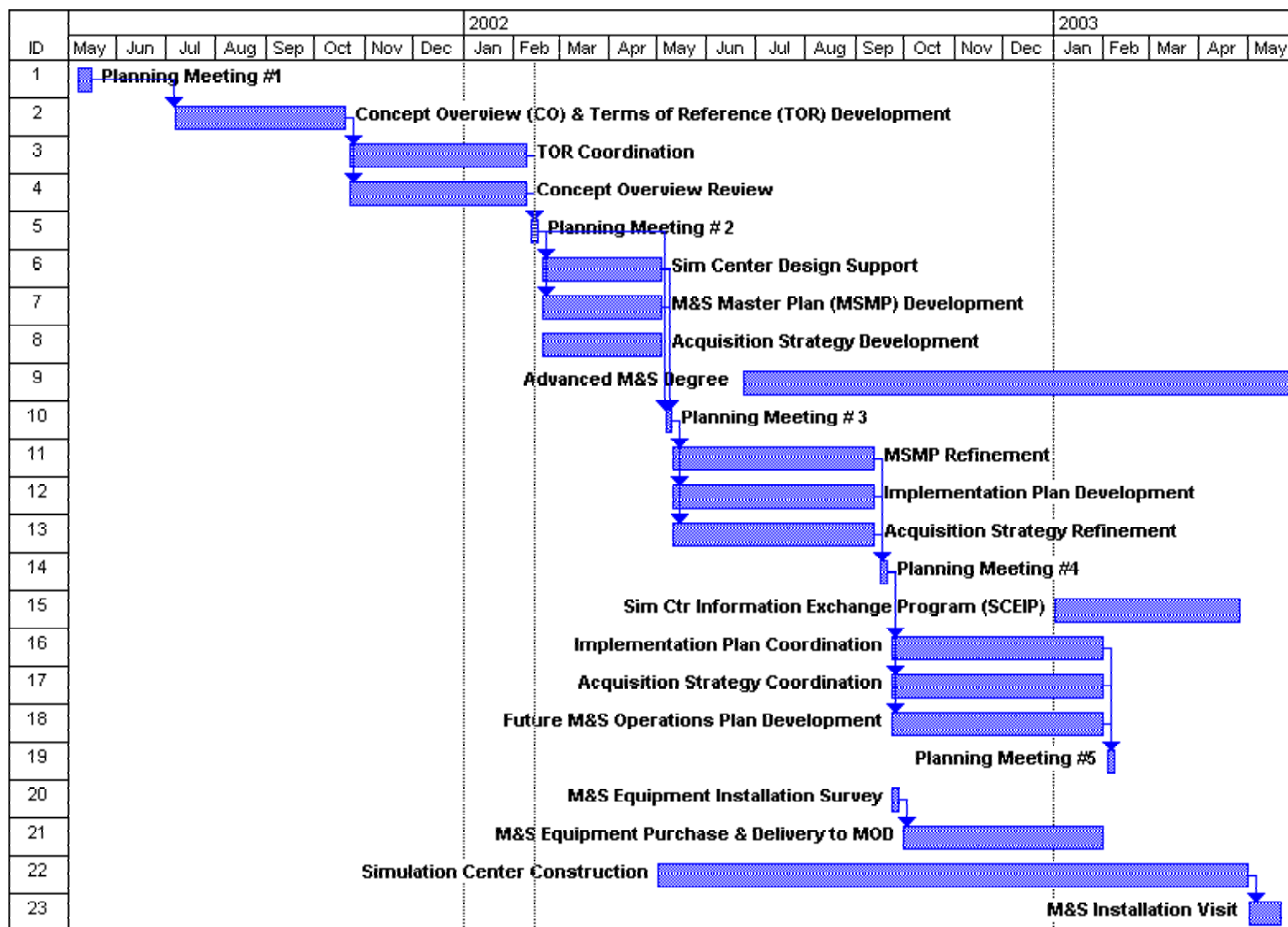


Background

- Initial visits/meetings (Oct 2000)
- OSD ISP/Eurasia support
- MSIAC involvement (Mar/Apr 2001)
- First visit to Uzbekistan (May 2001)
- Minister of Defense priorities
 - 1) M&S at the tactical level (at the **National Simulation Center** and **Armed Forces Academy**),
 - 2) M&S in support of education and training at the **Military Colleges** and **Sergeants Schools**,
 - 3) M&S in support of training and analysis at the operational level (at the **Military Districts**)
- * **M&S Advanced Education**
- Terms of Reference (TOR)
 - Strategic planning and implementation assistance efforts



Milestone Schedule





MSIAC (1 of 2)



- The **Modeling and Simulation Information Analysis Center** (MSIAC) is one of 13 government-owned, contractor-operated information analysis centers under the guidance of the Defense Technical Information Center
- **Mission:** To be the center for excellence for **M&S knowledge** and operational support and to provide **M&S solutions** and services to defense organizations and industry
- The MSIAC staff are **experienced defense and M&S professionals** who understand operational problems, training, education and resources



MSIAC (2 of 2)



- Single integrated support activity for the use, employment and sustainment of modeling and simulation
- Independent unbiased organization that can leverage the US defense community's M&S capability to find the most cost-effective solutions
- A focal point for M&S solutions
 - Facilitates the development of integrated, state-of-the-art M&S capability for the Defense Forces.-- From concept to final product
 - Requirements analysis
 - Strategic planning and implementation
 - Conducts M&S education and training
 - Provides access M&S information and assistance

Planning, Integration and Implementation Expertise



Enterprise Team – Roles and Responsibilities



Modeling and Simulation Information Analysis Center (MSIAC) - Modeling and simulation requirement determination, strategic planning and education



Joint Forces Command (JFCOM) – Global lead for Regional Security Cooperation Network and Joint M&S



Naval Air Warfare Center – Training Systems Division. (NAWCTSD) - Enhanced International Peacekeeping Capabilities (EIPC) program and Naval M&S



Simulation, Training and Instrumentation Command (STRICOM) – Simulation Center establishment and Army M&S



Electronic Systems Center (ESC) - National Military Command Center (NMCC) and Air Force M&S



Scope of Initiative

- Covers current, developmental and future M&S and ADL systems.
- Addresses Uzbek Armed Forces needs in the principal application areas of:
 - Training and exercises
 - Defense planning and analysis
 - Combat and security operations
 - Military support for civil emergencies
 - Research, technology development
 - Military equipment acquisition



Vision

- The Armed Forces of the Republic of Uzbekistan will use modeling and simulation, advanced distributed learning and related information technologies to improve dramatically the combat readiness and technological capabilities of military personnel. Modeling and simulation and information technologies will be integrated into a more robust technological infrastructure that will support military organizations at the tactical, operational, and strategic levels. This infrastructure will provide enhanced capabilities to conduct training and exercises, defense planning and analysis, combat and security operations, military support for civil emergencies, research, technology development, and military equipment acquisition.



Program Characteristics

Mission: Develop a comprehensive, integrated, state-of-the-art **M&S** and **Advanced Distributed Learning** capability for the Uzbek Armed Forces that will significantly **improve operational readiness** and **technical capabilities**.

- **Eight year (plus) multi-phased** program
- **National M&S Center** and **18** interconnected distributed facilities
 - Military Colleges, Sergeants Schools, Operational Commands and other Ministries in Civil Emergencies
- Integrated Advanced Distributed Learning capability
- NATO/PFP Interoperable
- Detailed coordinated planning and execution
 - **Requirements Analysis through M&S Master Plan**
- **National ability** to independently sustain and maintain the M&S system

Turning Vision into Reality



M&S Working Group

- Uzbek Minister of Defense and OSD (ISP)
 - Leadership
 - Uzbek Armed Forces Academy and MOD
 - Requirements, planning, program lead, implementation
 - MSIAC
 - Planning and integration, implementation, and program management
 - JFCOM
 - PfP Exercise participation
 - Simulation center design and distributed exercise expertise
 - STRICOM
 - Implementation planning and support
 - FMF acquisition management and execution
 - Tashkent DAO and SAO
 - Coordination
- multi-disciplined team, focused on developing and implementing a program to meet Uzbek needs**



Planning Documents

- **Terms of Reference**
- **Concept Overview**
 - Provided agreed to document on which to build following plans
- **Strategic Plan**
 - Provided a interim document for the Uzbeks to use in drafting of a decree listing national priorities to support funding decisions
- **Master Plan**
 - Vision
 - Requirements
 - Capabilities Analysis
 - Objectives
- **Implementation Plan**
 - Integrates time-phased objectives and resource requirements
- **Acquisition Strategy**
 - Recommendations on hardware, software, and systems support (education, training, data, engineering, etc.)



M&S Master Plan

- *Foundation of a comprehensive M&S capability*
- *M&S Master Plan:*
 - Tailored to the needs of the Armed Forces
 - Vision, requirements, objectives and time-phased actions
 - Action plan, not a study
 - Detailed implementation, integration, acquisition, education and long-term strategy annexes
 - Development process is an iterative and interactive educational process
 - Living document -- periodically revised to match evolving requirements and changing resources
- *M&S capabilities can be acquired and implemented early in the planning process*

Tools Tailored to Your Needs



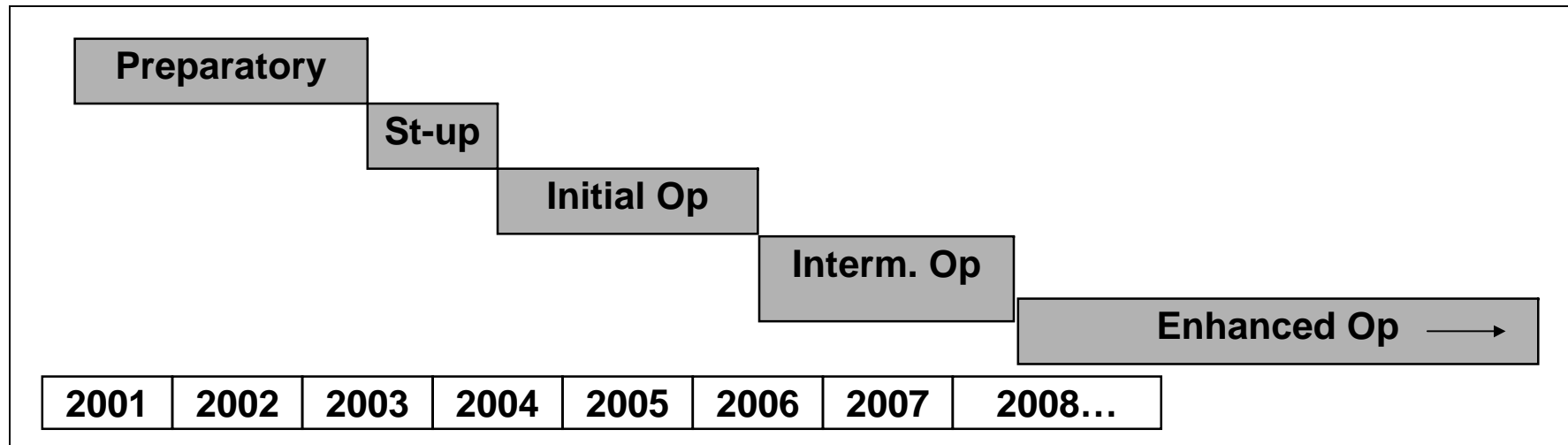
M&S Master Plan Objectives

Common Technical Framework	Common Services	Communications and Facilities	Models and Simulations	Operate Simulations	Advanced Technology Knowledge	Advanced Distributed Learning
1.1 Standard Simulation Architecture 1.2 Data Standards	2.1 Simulation Resource Library 2.2 Help Desk 2.3 M&S Configuration Management 2.4 Education and Outreach	3.1 Comm. Infrastructure 3.2 Facilities	4.1 Acquire Models and Simulations 4.2 Develop Models and Simulations 4.3 Integrated Systems Engineering	5.1 Technical Support 5.2 Data Support 5.3 Operator Training 5.4 Distributed Simulation Management	6.1 Advanced M&S Education 6.2 M&S Knowledge Base 6.3 International Distributed Simulations	7.1 ADL Standards 7.2 ADL Communications 7.3 Course Development 7.4 Digital Library

-- an integrated approach that builds capabilities overtime



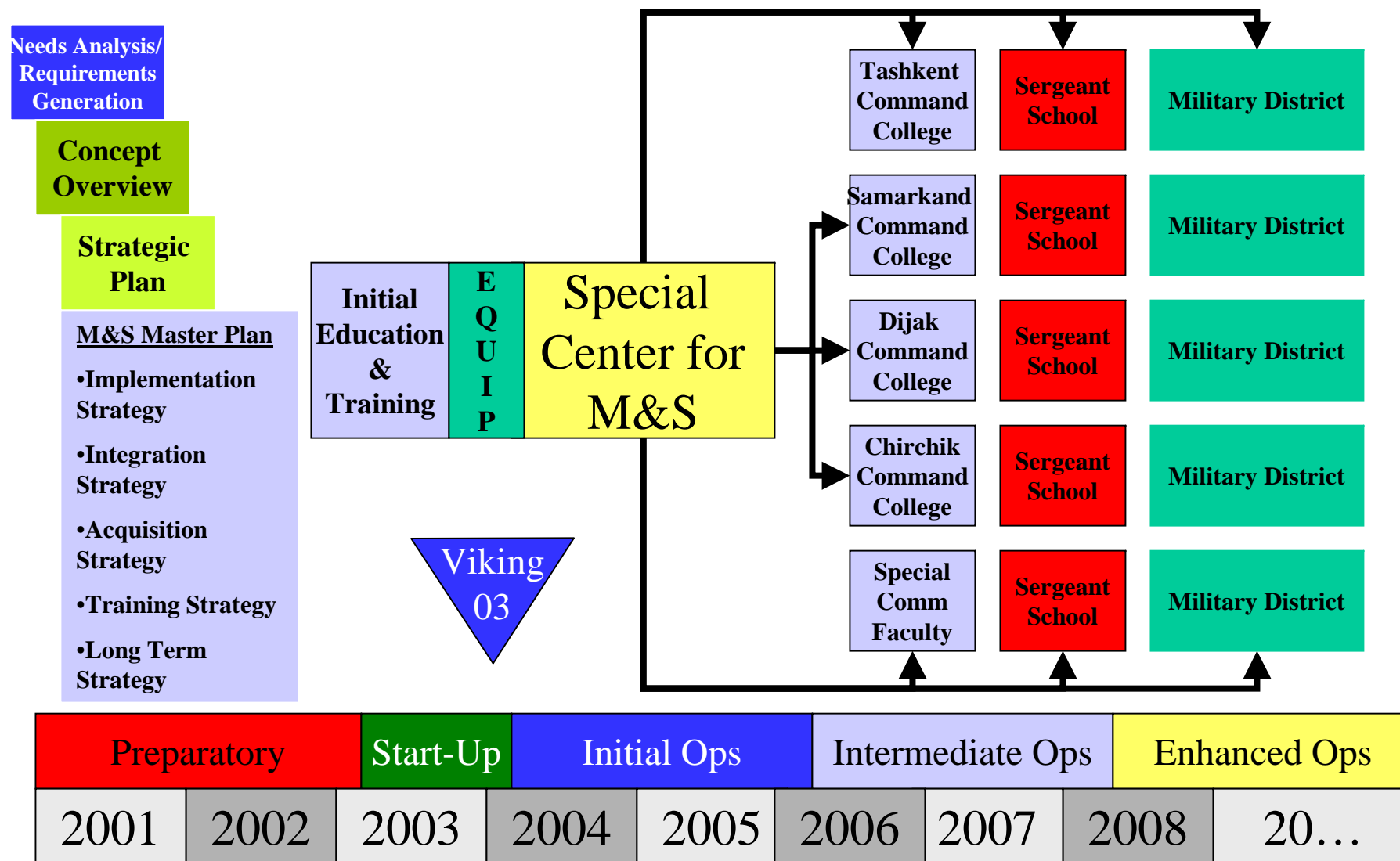
Implementation Phases



- **Preparatory** - a two-year planning and organizing time period.
- **Start-up** - a one-year period during which the Implementation Plan and Acquisition Strategy are first executed.
- **Initial Operational** – National Simulation Center becomes operational and is used for training officers attending the Academy
- **Intermediate** - M&S supported training is expanded to the Military Colleges and Sergeants Schools.
- **Enhanced Operational** - M&S-supported training is expanded in the military 19-15



Uzbek Capabilities Timeline





Current Status (1 of 2)

- Concept Overview
- Strategic Plan
- National Resolution
- Special Center for Modeling and Simulation (SCMS)
- Simulation Center Information Exchange Program (SCIEP)
- M&S and ADL Master Plan
- Implementation Plan and Acquisition Strategy
- Foreign Military Funding (FMF)
 - Letter of Request (LOR)
 - Letter of Offer and Acceptance (LOA)



Current Status (2 of 2)

- Advanced M&S education (NPS MOVES)
- Janus training
- Simulation Resource Library (SRL) and ADL Digital Library (DL)
- Key future events
 - President of Uzbekistan visit to SCMS
 - Viking 03
 - Integration of M&S and ADL into the curriculum of the Academy



Summary



- **Approach:** Train and educate Uzbeks to be able to conduct M&S and ADL activities using their own equipment and people
- **Why this effort is successful**
 - Uzbek leadership support
 - MSWG
 - Strategic planning as an educational process
 - Continuity
 - OSD(ISP) and US Embassy support
 - Defining of requirements upfront
 - FMF/FMS usage
 - Cooperation and Expertise
 - MSIAC
 - STRICOM
 - JFCOM
 - NPS
 - PIMS



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Partnerships for Success